## § 229.55

## § 229.55 Piston travel.

- (a) Brake cylinder piston travel shall be sufficient to provide brake shoe clearance when the brakes are released.
- (b) When the brakes are applied on a standing locomotive, the brake cylinder piston travel may not exceed 1½ inches less than the total possible piston travel. The total possible piston travel for each locomotive shall be entered on Form FRA F 6180–49A.
- (c) The minimum brake cylinder pressure shall be 30 pounds per square inch.

## § 229.57 Foundation brake gear.

A lever, rod, brake beam, hanger, or pin may not be worn through more than 30 percent of its cross-sectional area, cracked, broken, or missing. All pins shall be secured in place with cotters, split keys, or nuts. Brake shoes shall be fastened with a brake shoe key and aligned in relation to the wheel to prevent localized thermal stress in the edge of the rim or the flange.

# § 229.59 Leakage.

(a) Leakage from the main air reservoir and related piping may not ex-

- ceed an average of 3 pounds per square inch per minute for 3 minutes after the pressure has been reduced to 60 percent of the maximum pressure.
- (b) Brake pipe leakage may not exceed 5 pounds per square inch per minute.
- (c) With a full service application at maximum brake pipe pressure and with communication to the brake cylinders closed, the brakes shall remain applied at least 5 minutes.
- (d) Leakage from control air reservoir, related piping, and pneumatically operated controls may not exceed an average of 3 pounds per square inch per minute for 3 minutes.

#### DRAFT SYSTEM

## § 229.61 Draft system.

- (a) A coupler may not have any of the following conditions:
- (1) A distance between the guard arm and the knuckle nose of more than  $5\frac{1}{8}$  inches on standard type couplers (MCB contour 1904) or more than  $5\frac{5}{16}$  inches on D&E couplers.
- (2) A crack or break in the side wall or pin bearing bosses outside of the shaded areas shown in Figure 1 or in the pulling face of the knuckle.

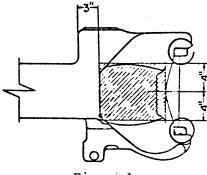


Figure 1

- (3) A coupler assembly without anticreep protection.
- (4) Free slack in the coupler or drawbar not absorbed by friction devices or draft gears that exceeds one-half inches.
- (5) A broken or cracked coupler carrier
- (6) A broken or cracked yoke.
- (7) A broken draft gear.
- (b) A device shall be provided under the lower end of all drawbar pins and